Claims 6, 7, 10, 12 and 14 were rejected under 35 U.S.C. §112, second paragraph. 35 U.S.C. §112, second paragraph, provides:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The Office Action contends that "selecting," identifying "a fit entity" and "thickness sufficient to allow a reaction rate" are indefinite because no standards are articulated in the claims for determining "selecting" or identifying "a fit entity" and no value of thickness is recited. This rejection is incorrect and should be withdrawn.

First with regard to claim 14, "thickness" is already specified as "sufficient to allow a reaction rate that is essentially independent of the mass transport rate of the second reactant system into the liquid." Applicant knows of no 35 U.S.C. §112, second paragraph requirement for "value." Functional language definition is 35 U.S.C. §112, second paragraph adequate. See Exxon Research & Engineering Co. v, United States, No. 00-5077 (Fed. Cir. Sept. 19, 2001).

As to claims 6, 7, 10 and 12, whether claims are definite under 35 U.S.C. §112, second paragraph, is determined in light of the specification. The claims read in light of the specification need only apprise those skilled in the art of the scope of the invention. Hybritech v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1387, 231 USPQ 81, 94, 95 (Fed. Cir. 1986), cert. denied 480 US 947 (1987). Claims 6, 7 and 10 are intended to and do cover any standard of selection and any criteria for the fit entity. By not specifying a standard the claims apprise those skilled in the art of the scope of the invention. Claims 6, 7, 10 and 12 meet the standard of 35 U.S.C. §112, second paragraph.

The rejection of claims 6, 7, 10, 12 and 14 under 35 U.S.C. §112, second paragraph should be withdrawn.

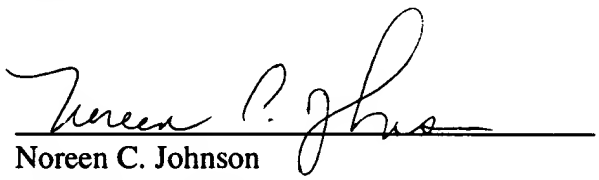
.Claims 1 to 10, 12, 14 and 15 were rejected under 35 U.S.C. §102(b) over Singh et al. Singh et al. synthesizes and evaluates chemical structures. The present claims are directed to forming a mixture that comprises a catalyst that participates in an HTS synthesis reaction by affecting the reaction without change itself. Singh et al. does not teach or suggest "forming a first population of mixture entities and detecting a catalytic property of each of said entities." The rejection of claims 1 to 10, 12, 14 and 15 under 35 U.S.C. §102(b) over Singh et al. should be withdrawn.

The Office Action objects to claims 6, 7 and 14 and to the specification, page 15, lines 1 to 3 and the Table. The amendments to the claims and specification should overcome the objections.

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 1, 5 and 8 to 18 are allowable. Reconsideration and allowance are requested.

Should the Examiner believe that any further action is necessary in order to place this application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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Schenectady, New York
5/16, 2002

MARKED UP VERSION OF SPECIFICATION

Please rewrite the specification, page 15, lines 1 to 3 and Table 5 as follows:

[Performance is expressed numerically as a catalyst turnover number or TON. TON is defined as the number of moles of aromatic carbonate produced per mole of Palladium catalyst charged. Duplicate experiments are averaged to give an average TON. The results are shown in TABLE 5.

TABLE 5]

Performance is expressed numerically as a catalyst turnover number or TON. TON is defined as the number of moles of aromatic carbonate produced per mole of Palladium catalyst charged. Duplicate experiments are averaged to give an average TON. The results are shown in TABLE 5.

TABLE 5

MARKED UP VERSION OF CLAIMS

1 (amended). A method, comprising steps of:

(A) [synthesizing] forming a first population of mixture entities and detecting a catalytic property of each of said entities by a high throughput screening (HTS) method and

(B) executing a genetic algorithm based on said property of said entities to identify a second population of entities.

3 (amended). The method of claim 1, comprising randomly identifying said first population of entities prior to [synthesizing] forming said first population according to step (A).

6 (amended). The method of claim 1, further comprising generating a binary string representing variable parameters of entities, [synthesizing] forming said entities and selecting said first population from said entities and step (B) comprises executing a genetic algorithm with a processor on said binary string to produce a binary string representing said second population of entities.

7 (amended). The method of claim 1, further comprising generating a binary string representing variable parameters of entities, [synthesizing] forming said entities, evaluating said [synthesized] entities for a desired property, weighting said entities according to an hierarchy of fitness of said property and selecting said first population as a sampling from said weighed entities and step (B) comprises executing a genetic algorithm with a processor on said binary string to produce a binary string representing said second population of entities.

8 (amended). The method of claim 1, further comprising generating a binary string representing variable parameters of entities, [synthesizing] forming said entities, evaluating said [synthesized] entities for a desired property, pairing said entities and (B) comprises executing a genetic algorithm with a processor on said binary string to produce a binary string representing said second population of entities.

9 (amended). The method of claim 1, further comprising generating a binary string representing variable parameters of entities, [synthesizing] forming said entities, evaluating said [synthesized] entities for a desired property and pairing said entities and (B) comprises executing a genetic algorithm comprising a uniform random crossover operator to produce a binary string representing said second population of entities.

10 (amended). The method of claim 1, further comprising generating a binary string representing variable parameters of entities, [synthesizing] forming said entities, evaluating said [synthesized] entities for a desired property, weighting said entities according to an hierarchy of fitness according to said property, selecting said first population as a sampling from said weighed entities and pairing said entities and step (B) comprises executing a genetic algorithm with a processor on said binary string to produce a binary string representing said second population of entities.

14 (amended). The method of claim 1, further comprising [synthesizing] forming said second population of entities by steps of:

providing a first reactant system at least partially embodied in a liquid; and

contacting the liquid with a second reactant system at least partially embodied in a gas, the second reactant system having a mass transport rate into the liquid wherein the liquid forms a film having a thickness sufficient to allow a reaction rate that is essentially independent of the mass transport rate of the second reactant system into the liquid [to synthesize said send population of entities].

40 (amended). A method of selecting a carbonylation catalyst, comprising:

(A) [synthesizing] <u>forming</u> a first population of prospective carbonylation catalyst entities and detecting a property of each of said entities; and

(B) executing a genetic algorithm based on said property of said entities to identify a second population of prospective carbonylation catalyst entities.